

ABSTRACT

A process for the synthetic generation of methane is disclosed. The process allows to catalytically convert hydrogen and carbon monoxide effectively in a fluidized bed catalytic reactor which avoids a rapid deactivation of the catalyst material and therefore delivers a high activity of the catalytic active components in the process. Both thermochemical reactions, the endothermic reformation of higher hydrocarbons, e.g. aromatic hydrocarbons, and the exothermic methane generation, proceed simultaneously within the fluidized bed catalytic reactor, leading to an overall enhanced thermal efficiency of the conversion process.